

1 **What is claimed is:**

2 1. A graphical user interface displaying in a first portion thereof an evolution of a
3 solution for a genetic algorithm, said graphical user interface comprising:

4 an evolution parameter field in a second portion of said graphical user interface,
5 said evolution parameter field having a first position, said evolution parameter field
6 comprising at least one variable related to the evolution of said genetic algorithm; and
7 modification means for modifying the evolution of said solution for said genetic
8 algorithm in real time based upon a positional adjustment of said evolution parameter
9 field from said first position to a second position.

10 2. The graphical user interface according to claim 1, wherein said evolution
11 parameter field is a slider.

12 3. The graphical user interface according to claim 1, wherein said evolution
13 parameter field is manipulated by a mouse, joystick, knob, or touchpad.

14 4. The graphical user interface according to claim 1, wherein said variable related to
15 the evolution of said genetic algorithm is a number of evaluations performed in said
16 genetic algorithm.

17 5. The graphical user interface according to claim 1, wherein said variable related to
18 the evolution of said genetic algorithm is a probability of any bit in a chromosome being a
19 cutpoint in said genetic algorithm.

20 6. The graphical user interface according to claim 1, wherein said variable related to
21 the evolution of said genetic algorithm is a probability of any bit in a chromosome being
22 mutated in said genetic algorithm.

23 7. The graphical user interface according to claim 1, wherein said modification
24 means comprises a direct manipulation of said genetic algorithm as indicated by the
25 positional adjustment of said evolution parameter field, said direct manipulation being
26 accomplished by overwriting a variable used in said genetic algorithm.

27 8. A method for dynamically modifying an evolution of a solution for a genetic
28 algorithm, said method comprising steps of:

29 adjusting an evolution parameter field within a graphical user interface of a
30 computer system from a first position to a second position, resulting in a positional
31 adjustment, said evolution parameter field comprising at least one variable related to the
32 evolution of said genetic algorithm;

33 updating the evolution of said solution for said genetic algorithm in real time
34 based upon said positional adjustment in said step of adjusting; and

1 displaying the update of said solution for said genetic algorithm within the
2 graphical user interface.

3 9. The method according to claim 8, wherein in said step of adjusting, said evolution
4 parameter field is adjusted from said first position to said second position by a user.

5 10. The method according to claim 8, wherein said step of updating comprises a direct
6 manipulation of said genetic algorithm as indicated by the positional adjustment of said
7 evolution parameter field, said direct manipulation being accomplished by overwriting a
8 variable used in said genetic algorithm.

9 11. The method according to claim 10, wherein said variable used in said genetic
10 algorithm is a number of evaluations performed in said genetic algorithm.

11 12. The method according to claim 10, wherein said variable used in said genetic
12 algorithm is a probability of any bit in any solution being a cutpoint in said genetic
13 algorithm.

14 13. The method according to claim 10, wherein said variable used in said genetic
15 algorithm is a probability of any bit in any solution being mutated in said genetic
16 algorithm.

17 14. A machine readable memory for storing computer code to act as a graphical user
18 interface to a genetic algorithm, said memory comprising:

19 a first code section stored in memory for receiving an adjustment of an evolution
20 parameter field within said graphical user interface from a first position to a second
21 position, resulting in a positional adjustment, said evolution parameter field comprising at
22 least one variable related to the evolution of said genetic algorithm;

23 a second code section stored in memory for updating the evolution of said solution
24 for said genetic algorithm in real time based upon said positional adjustment in said step
25 of adjusting; and

26 a third code section stored in memory for displaying the update of said solution
27 for said genetic algorithm within the graphical user interface.

28 15. The machine readable memory according to claim 14, wherein said memory exists
29 on a server.

30 16. The machine readable memory according to claim 14, wherein said memory exists
31 on a website.